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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,004	08/14/2006	Paul A. Cain	Q92367	1102
23373	7590	12/18/2008	EXAMINER	
SUGHRUE MION, PLLC			KUO, WENSING W	
2100 PENNSYLVANIA AVENUE, N.W.				
SUITE 800			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20037			2826	
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			12/18/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/562,004	CAIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	W. Wendy Kuo	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 29 September 2008.

2a) This action is **FINAL**.                            2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 83-99 and 105 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 83-99 and 105 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

## DETAILED ACTION

1. Claims 83-99 and 105 are pending.

### ***Oath/Declaration***

2. New declarations for inventors Sirringhaus and Menon are accepted. However, ***the oath or declaration is still defective***. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

***The oath/declaration is missing a signature for inventor Werne.***

### ***Claim Objections***

3. Amendments to claims 86 and 93 to correct the informalities indicated in the Office action dated 03/27/2008 are acknowledged and accepted.

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**5. Claims 83-98 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 7-11, 29, 30, 36, 55, 57, 58, 74, 77, 84, 97, and 98 of U.S. Patent No. 7,407,846 (hereinafter Sirringhaus).**

Although the conflicting claims are not identical, they are not patentably distinct from each other because:

**6. With respect to claim 83, Sirringhaus (in claims 1, 57, 58, and 77) teaches a method for fabricating a rectifying diode of a device including an active semiconductor**

layer (third body) between two electrodes, wherein the electrodes are formed by a method, comprising:

- Forming a first electrode (first body) of a first conductive material in a first region of a substrate,
- Depositing a liquid comprising a second conductive material to come in contact with the first electrode (first body) and to form a second electrode (second body) of the second conductive material in a second region of the substrate spaced from the first region,
- Preparing the surface of the first electrode (first body) prior to the deposition of the liquid comprising the second material to repel the liquid,
- Wherein the shortest distance between the first electrode (first body) and the second electrode (second body) defines the thickness of the active semiconducting layer of the rectifying diode

7. With respect to claim 84, Sirringhaus (in claims 74 and 77) teaches the additional step of depositing at least one semiconducting layer (third body) in the region between the first and second electrodes.

8. Claim 85 is unpatentable over claim 55 of Sirringhaus.

9. Claim 86 is unpatentable over claims 7, 8, 36, and 85 of Sirringhaus.

10. Claim 87 is unpatentable over claims 97 and 98 of Sirringhaus.

11. Claim 88 is unpatentable over claims 57 and 84 of Sirringhaus.

12. Claim 89 is unpatentable over claim 7 of Sirringhaus.

13. Claim 90 is unpatentable over claim 8 of Sirringhaus.

14. Claim 91 is unpatentable over claim 9 of Sirringhaus.
15. Claim 92 is unpatentable over claim 10 of Sirringhaus.
16. Claim 93 is unpatentable over claims 11 and 57 of Sirringhaus.
17. Claim 94 is unpatentable over claim 29 of Sirringhaus.
18. Claim 95 is unpatentable over claim 30 of Sirringhaus.
19. Claims 96-98 are unpatentable over claims 11-15 of Sirringhaus. Note that it has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense (specifically with respect to claim 96). *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).
20. **Claim 99 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 11-15 and 56-58 of Sirringhaus in view of Noumi et al. (US 6,317,174) (hereinafter Noumi).** Sirringhaus teaches all of the limitations of claim 98 above. Sirringhaus does not explicitly teach that the conductive material of the first electrode has a different workfunction than the conductive material of the second electrode. Noumi teaches that electrodes can be composed of different metals in order to achieve a low resistance (column 15, lines 58-67) (\*note that metals of different compositions will have different workfunctions). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the method of Sirringhaus with the electrodes of Noumi having different metal compositions for the benefit of achieving a low resistance.
21. **Claim 105 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 57 and 58 of Sirringhaus in**

**view of Kobayashi et al. (US 6,270,389) (hereinafter Kobayashi).** Sirringhaus teaches all of the limitations of claim 83 above. Sirringhaus fails to teach that the material of at least one of the first and or second electrodes is a printable metal. Kobayashi teaches that a suitable conducting material for electrodes is a printable metal (column 23, lines 25-32). All of the component parts are known in Sirringhaus and Kobayashi. The only difference if the combination of the "old elements" into a single device. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the method of Sirringhaus with the electrodes of Kobayashi to achieve the predictable result of providing an electrically conducting electrode.

***Response to Amendment***

22. The declaration under 37 CFR 1.132 filed 29 September 2008 is sufficient to overcome the rejection of claims 83-99 and 105 based upon Sirringhaus et al. (US 2005/0151820).

***Response to Arguments***

23. Applicant's arguments, see remarks, page 6, filed 29 September 2008, with respect to the rejection(s) of claim(s) 83-99 and 105 under 35 U.S.C. §102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Sirringhaus et al. (US 7,407,849) as addressed above.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. Wendy Kuo whose telephone number is (571)270-1859. The examiner can normally be reached Monday through Friday 7:00 AM to 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue A. Purvis can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

W. Wendy Kuo  
Examiner  
Art Unit 2826

WWK

/Sue A Purvis/  
Supervisory Patent Examiner, Art Unit 2826